

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

# Application Review

**Issue Date:** XXXX XX, 2017

**Region:** Mooresville Regional Office  
**County:** Stanly  
**NC Facility ID:** 8400020  
**Inspector's Name:** Carlotta Adams  
**Date of Last Inspection:** 11/12/2015  
**Compliance Code:** 3 / Compliance - inspection

<p align="center"><b>Facility Data</b></p> <p><b>Applicant (Facility's Name):</b> H. W. Culp Lumber Co, Inc.</p> <p><b>Facility Address:</b>  H. W. Culp Lumber Co, Inc.  491 Old US 52 Highway  New London, NC 28127</p> <p><b>SIC:</b> 2421 / Sawmills &amp; Planing Mills General  <b>NAICS:</b> 321113 / Sawmills</p> <p><b>Facility Classification: Before:</b> Title V <b>After:</b>  <b>Fee Classification: Before:</b> Title V <b>After:</b></p>				<p align="center"><b>Permit Applicability (this application only)</b></p> <p><b>SIP:</b>  <b>NSPS:</b>  <b>NESHAP:</b>  <b>PSD:</b>  <b>PSD Avoidance:</b>  <b>NC Toxics:</b>  <b>112(r):</b>  <b>Other:</b></p>																																																			
<p align="center"><b>Contact Data</b></p>				<p align="center"><b>Application Data</b></p>																																																			
<p align="center"><b>Facility Contact</b></p> <p>Mike Sasser  ESH Manager  (704) 463-7311  PO Box 235  New London, NC  28127+0235</p>		<p align="center"><b>Authorized Contact</b></p> <p>Henry Culp, III  President  (704) 463-7311  PO Box 235  New London, NC 28127</p>		<p align="center"><b>Technical Contact</b></p> <p>Conrad Carter, Jr., P.E.  President  (704) 983-2302  PO Box 1760  Albemarle, NC  28002+1760</p>		<p><b>Application Number:</b> 8400020.15A &amp; 16A  <b>Date Received:</b> 09/30/2015 and 08/10/2016  <b>Application Type:</b> Renewal  <b>Application Schedule:</b> TV-Renewal</p> <p align="center"><b>Existing Permit Data</b></p> <p><b>Existing Permit Number:</b> 04897/T18  <b>Existing Permit Issue Date:</b> 07/25/2011  <b>Existing Permit Expiration Date:</b> 06/30/2016</p>																																																	
<p><b>Total Actual emissions in TONS/YEAR:</b></p> <table border="1"> <thead> <tr> <th>CY</th> <th>SO2</th> <th>NOX</th> <th>VOC</th> <th>CO</th> <th>PM10</th> <th>Total HAP</th> <th>Largest HAP</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>---</td> <td>---</td> <td>208.12</td> <td>---</td> <td>12.15</td> <td>18.27</td> <td>8.82 [Methanol (methyl alcohol)]</td> </tr> <tr> <td>2014</td> <td>3.83</td> <td>74.95</td> <td>235.28</td> <td>26.00</td> <td>69.80</td> <td>23.81</td> <td>8.63 [Methanol (methyl alcohol)]</td> </tr> <tr> <td>2013</td> <td>3.64</td> <td>71.27</td> <td>220.03</td> <td>24.73</td> <td>66.40</td> <td>22.36</td> <td>8.07 [Methanol (methyl alcohol)]</td> </tr> <tr> <td>2012</td> <td>3.58</td> <td>70.15</td> <td>214.26</td> <td>24.33</td> <td>64.40</td> <td>21.83</td> <td>7.86 [Methanol (methyl alcohol)]</td> </tr> <tr> <td>2011</td> <td>3.17</td> <td>62.09</td> <td>197.37</td> <td>21.55</td> <td>56.98</td> <td>19.92</td> <td>7.24 [Methanol (methyl alcohol)]</td> </tr> </tbody> </table>								CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP	2015	---	---	208.12	---	12.15	18.27	8.82 [Methanol (methyl alcohol)]	2014	3.83	74.95	235.28	26.00	69.80	23.81	8.63 [Methanol (methyl alcohol)]	2013	3.64	71.27	220.03	24.73	66.40	22.36	8.07 [Methanol (methyl alcohol)]	2012	3.58	70.15	214.26	24.33	64.40	21.83	7.86 [Methanol (methyl alcohol)]	2011	3.17	62.09	197.37	21.55	56.98	19.92	7.24 [Methanol (methyl alcohol)]
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<p><b>Review Engineer:</b> David B. Hughes</p> <p><b>Review Engineer's Signature:</b>      <b>Date:</b></p>				<p align="center"><b>Comments / Recommendations:</b></p> <p><b>Issue</b> 04897/T19  <b>Permit Issue Date:</b>  <b>Permit Expiration Date:</b></p>																																																			

## **I. Purpose of Application**

This permitting action is a renewal of an existing Title V permit pursuant to 02Q .0513. The existing Title V permit (**04897T18**) was issued on **July 25, 2011**, with an expiration date of **June 30, 2016**. The renewal application was received on **September 30, 2015**, or at least nine months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

Air Permit Application No. 8400020.16A was received on **August 10, 2016** for a significant modification pursuant to 15A NCAC 02Q .0501(c)(1) to increase the maximum throughput in kilns (**ID Nos. K-1 and E-9**). This application will be consolidated and processed with the application for TV permit renewal (8400020.15A).

## **II. Facility Description**

The facility is an operating sawmill with wood planing and wood drying operations.

## **III. History/Background/Application Chronology**

**January 12, 2007** – Permit **04897T16** issued as a first-time Title V permit.

**October 2, 2008** – Permit **04897T17** issued as a minor modification to modify permit to add facility-wide modeling demonstration results.

**March 21, 2011** – Annual compliance inspection completed by Carlotta Adams of the MRO.

**March 29, 2011** – Permit application **8400020.11A** received as a Title V permit renewal application. The application was deemed complete for processing.

**May 5, 2011** – DRAFT permit sent to Permittee and MRO for comment prior to public notice and EPA review. Denise Hayes of the MRO requested that the regional office address be corrected on the cover page of the permit. This modification was made.

**June 7, 2011** – DRAFT permit sent to 30-day public notice and 45-day EPA review. The 30-day public comment period ended **July 7, 2011** with the receipt of no comments. The 45-day EPA review period ended **July 22, 2011** with the receipt of no comments.

**July 25, 2011** – Permit **04897T18** issued as a Title V renewal.

**September 30, 2015** – Permit application **8400020.15A** received as a Title V permit renewal application. The application was deemed complete for processing.

**November 12, 2015** – MRO completed annual facility inspection.

**July 26, 2016** – Carlotta Adams from MRO e-mailed David B. Hughes to inform him that H.W. Culp Lumber Co. Inc. has a MACT avoidance condition in their permit that limits the board feet processed to 110,000,000 board feet processed per 12 months. They had exceeded that limit since January 2016 and requested to increase the board feet processed.

**August 10, 2016** – Permit application 8400020.16A received as a Title V significant modification application. The application was deemed complete for processing.

**December 1, 2016** – Permit application 8400020.16A reassigned to David B. Hughes in order to be consolidated with the application for permit renewal.

**December 7, 2016** - DRAFT permit sent to Permittee and MRO for comment prior to public notice and EPA review. The Permittee provided comments on draft permit via e-mail on **December 15, 2016**. No comments were received from MRO.

**Xxxx x, 2017** - DRAFT permit sent to 30-day public notice and 45-day EPA review. The 30-day public comment period ended XXXX XX, 2017 with the receipt of no comments. The 45-day EPA review period ended XXXX XX, 2017 with the receipt of no comments.

#### IV. Permit Modifications/Changes and ESM Discussion

The following table describes the modifications to the current permit as part of the renewal process.

Page	Section	Description of Change
Attachment	Insignificant activities	-amended permit revision number
Cover	-	-amended all dates and permit revision numbers
All	Header	-amended permit revision number
	2.1 A (Table)	-added particulate matter 15A NCAC 02D .0512 -removed odors 15A NCAC 02D .1806
	2.1 A.1	-added 15A NCAC 02D .0512 regulation
4	2.1 A.2.b	-added ID numbers
	2.1 B (Table)	-moved Toxic Air Pollutants 15A NCAC 02D .1100 from 2.2 A.3 to 2.1 B.4 -moved Hazardous Air Pollutants 15A NCAC 02Q .0317 (MACT Avoidance) from 2.2 A.2 to 2.1 B.6
	2.1 B. 4	-moved Toxic Air Pollutants 15A NCAC 02D .1100 from 2.2 A.3
	2.1 B.5.b	-changed emission factor from 3.8 to 3.83 pounds of VOC emissions per thousand board feet of lumber dried
5	2.1 B.5.d	-updated shell language
	2.1 B 6	-moved Hazardous Air Pollutants 15A NCAC 02Q .0317 (MACT Avoidance) from 2.2 A.2
	2.1 C (Table)	-removed odors 15A NCAC 02D .1806
6	2.1 C.1.b	-clarified emission source with associated control device(s)
7	2.1 C.2.c	-added ID numbers
8	2.2 A (Table)	-removed Hazardous Air Pollutants 15 NCAC 02Q .0317 (MACT Avoidance) and Toxic Air Pollutants 15A NCAC 02D .1100
9	2.2 A.2	-moved Toxic Air Pollutants 15A NCAC 02D .1100 to 2.1 B.4
	2.2 A.3	-moved Hazardous Air Pollutants 15A NCAC 02Q .0317 (MACT Avoidance) to 2.1 B.6
12-22	General Conditions	-updated shell conditions (v4.0)
23	List of Acronyms	-updated to current list of acronyms

There were only minor, non-significant modifications to the equipment descriptions needed in Title V Equipment Editor (TVEE).

## **V. Application No. 8400020.16A**

H.P. Culp Lumber Co. Inc. has requested an air permit modification in order to avoid Prevention Significant Deterioration (PSD) for volatile organic compounds (VOC). They have requested an increase in maximum lumber drying kilns throughput for sources (ID Nos. K-1 and E-9) from 110,000,000 board feet of dried lumber on a 12-month rolling average (bd ft/yr) to 115,000,000 bd ft/yr. The facility has also requested to increase the VOC emission factor to 3.83 pounds VOC emissions per thousand board feet of lumber dried, as provided in DAQ's emission spreadsheet for kilns<sup>1</sup>. The VOC emissions using 115,000,000 bd ft/yr and the revised VOC emission factor are calculated to be 220 tons per year (tons/yr). The VOC emissions are less than 250 tons per consecutive 12-month period per regulation 15A NCAC 02Q .0317: Avoidance Condition for 15A NCAC 02D .0530 Prevention of Significant Deterioration.

In order to avoid applicability of 15A NCAC 02D .1111: Maximum Achievable Control Technology and 40 CFR Part 63 Subpart DDDD, "National Emission Standards for Hazardous Air Pollutants for the Plywood and Composite Wood Products", the Permittee shall restrict the operation rate of these sources (**ID Nos. K-1 and E-9**) to less than 115,000,000 bd ft/yr. The facility used emission factors from DAQ's spreadsheet for kilns to determine the HAP emissions from the increased production rate. According to calculations from the application, emissions of methanol, the single largest HAP, were 9.26 tons/yr (less than 10 tons/yr), and the total HAP emissions were 19.2 tons/yr (less than 25 tons/yr).

## **VI. Regulatory Review**

The facility is currently subject to the following regulations:

15A NCAC 02D .0512, Particulates from Wood Products Finishing Plants  
15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes  
15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources  
15A NCAC 02D .0521, Control of Visible Emissions  
15A NCAC 02D .1100, Control of Toxic Air Pollutants  
15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions  
15A NCAC 02Q .0317, Avoidance Conditions (for 15A NCAC 2D .0530, Prevention of Significant Deterioration, and 15A NCAC 02D .1111, Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD))  
15A NCAC 02Q .0711, Emission Rates Requiring a Permit

A regulatory review for these current permit conditions will not be included in this document.

## **VII. NSPS, NESHAPS/MACT, PSD, 112(r), CAM**

**NSPS** – The Permittee is not currently subject to any New Source Performance Standards. This permit renewal/modification does not affect this status.

**NESHAPS/MACT** - The Permittee operates under a MACT avoidance condition for 40 CFR 63, Subpart DDDD Plywood and Composite Wood Products. To ensure compliance and avoid

<sup>1</sup> DAQ's "Wood Kiln Emission Calculator Revision C" June 2007

applicability of this regulation, the Permittee is required to limit the amount of lumber dried in the two kilns (**ID Nos. K1 and ES-9**) to less than 115,000,000 board feet of dried lumber per 12-month rolling average basis. The permit requires monthly records of production and semi-annual reporting. This permit renewal/modification does not affect this status.

Because of the MACT avoidance condition, the facility is now classified as a Title III minor facility. As part of this permit renewal process, the facility was reviewed for area source GACT applicability. No current standards were found to apply to this facility. Note that the area source GACT for combustion sources – 40 CFR 63, Subpart JJJJJ – only applies to indirect-fired units. The Permittee operates direct-fired lumber drying units that are not subject to any requirements.

**PSD** – The Permittee operates under a PSD avoidance condition limiting volatile organic compound emissions to less than 250 tons per year from the two lumber kilns (**ID Nos. K1 and ES-9**). The permit condition includes monthly calculations (amount of lumber dried times an emission factor of 3.83 pounds VOC per thousand board feet) and recordkeeping of VOC emissions and semiannual reporting requirements. This permit renewal/modification does not affect this status.

**112(r)** – The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store one or more of the regulated substances in quantities above the thresholds in the Rule. This permit renewal/modification does not affect this status.

**CAM** – 40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility that have pre-controlled emissions above the major source threshold and use a control device to meet an applicable standard. The following table identifies the current equipment/control device relationships:

<b>Emission Source ID No.</b>	<b>Emission Source Description</b>	<b>Control Device ID No.</b>	<b>Control Device Description</b>
<b>ES1</b>	One wood planing operation	<b>C1</b>	One cyclone (168 inches in diameter)
		<b>4B</b>	One bagfilter (5,992 square feet of filter area)
<b>ES2</b>	One wood working operation	<b>C2</b>	One cyclone (51 inches in diameter)
<b>ES4</b>	One hammermill operation	<b>C4</b>	One cyclone (102 inches in diameter)
<b>IES-11</b>	One saw sharpening operation and associated	<b>NA</b>	One bagfilter (689 square feet of filter area)

The following table outlines the specific permit conditions for each source/control device arrangement and if the control device is installed to comply with that requirement:

Emission Source ID No(s).	Control Device ID No(s).	Permit Condition(s)*	Pollutant	Control Equipment Installed to Meet Permit Limit?
ES1	C1  4B	15A NCAC 02D .0512	Particulate Matter	Yes
ES2	C2	15A NCAC 02D .0512	Particulate Matter	Yes
ES4	C4	15A NCAC 02D .0512	Particulate Matter	Yes
IES-11	-	15A NCAC 02D .0512	Particulate Matter	Although the emission source is insignificant, compliance with regulations are required. The emission source is exempt from permitting, not exempt from the regulations.

\* The following permit conditions, where applicable, are not included in the CAM analysis:

1. 15A NCAC 02D .0521 – This regulation limits visible emissions to specific opacity levels based on equipment manufacture date. Visible emissions are not criteria pollutants subject to CAM analysis.
2. 15A NCAC 02D .1806 – This regulation limits odorous emissions. Odors are state-enforceable limits and are not criteria pollutants subject to CAM analysis.

(ES1) One wood planing operation – This operation is the sizing of dimensional lumber prior to the drying process. As specified in DAQ woodworking spreadsheet<sup>2</sup>, emissions of wood dust regulated as PM<sub>10</sub> from planing operations are estimated to be zero. Therefore, CAM does not apply to this control device.

(ES2) One wood working operation – This operation is the transport of dry wood shavings from the planer mill to the shavings bin (Note this source has been called “shavings transport” in the past). Per the discussion above, no PM<sub>10</sub> emissions are expected from planning operations. Therefore, CAM does not apply.

(ES4) One hammermill operation – This operation is the crushing of wood shavings in a hammermill and conveying material to collection bins prior to its use as a fuel in the woodwaste-fired boilers. The Permittee estimated emissions from these sources based on stack testing data for the source (as no emission factors for wood crushing could be identified). PM<sub>10</sub> emissions are estimated as follows:

Using a mass balance approach and an estimated control efficiency of 85% for a cyclone for PM<sub>10</sub> emissions: Total inlet = exhaust + catch.

0.223 pounds per hour are collected with cyclone (exhaust)

$(0.223 \text{ pounds per hour} \times 0.85) / (0.15) = 1.264 \text{ pounds per hour (catch)}$

Total inlet = 1.50 pounds per hour (**6.57 tons per year**).

<sup>2</sup> DAQ’s “Woodworking Emissions Calculator Revision C” June 2007

This amount is less than the CAM applicability threshold of 100 tons per year. Therefore, CAM does not apply.

### **VIII. Facility Wide Air Toxics**

The Permittee is currently subject to modeled emission rates per 15A NCAC 02D .1100 for formaldehyde, acrolein, and phenol from the two lumber drying kilns (**ID Nos. K1 and ES-9**) per an approved modeling demonstration. No monitoring/recordkeeping/reporting is required to ensure compliance with these requirements. This permit renewal/modification does not affect this status.

The permit also lists acetaldehyde as being emitted at rates below the toxic pollutants emission rate (TPER) per 15A NCAC 02Q .0711. This permit renewal/modification does not affect this status.

### **IX. Facility Emissions Review**

See Table in the header for a summary of the actual emissions as reported to DAQ from the years 2011 to 2015.

### **X. Stipulation Review**

The facility was last inspected by Carlotta Adams on **November 12, 2015**. Based on her observations the facility appeared to be in compliance with their Title V permit requirements.

### **XI. Public Notice/EPA and Affected State(s) Review**

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. The Mecklenburg County Department of Environmental Protection is an affected area within 50 miles of this facility.

### **XII. Conclusions, Comments, and Recommendations**

A professional engineer's seal was not required for this renewal.

A consistency determination was not required for this renewal.

MRO recommends issuance of the permit and was sent a DRAFT permit prior to issuance (See Section III of this document for a discussion).

RCO concurs with MRO's recommendation to issue the renewed air permit.